

# Complete Streets Focus Area Bike and Pedestrian

## Where are we Today?

- 159 Centerline miles of bike facilities in comparison to 305 miles of road
- 95% of Boulder's arterial streets accommodate bicycles
- Platinum designated Bicycle friendly Community by League of American Bicyclists




## Where do we want to be?

- More than 15% bike mode share
- A Diamond designated Bicycle Friendly Community
- Recognized as a Walk Friendly Community



## Improving Boulder’s Bike System; Making it more safe and complete

As part of the Complete Streets focus area of the TMP update, we’ll launch an interactive living laboratory to:

-  Engage neighborhoods, conduct walk audits and learn what makes a good pedestrian environment.
-  Demonstrate new bike facilities and programs to see if they are right for boulder – potential innovations include cycle tracks, advisory bike lanes, trike bikes and skills workshops.
-  Develop a Bike & Walk Action Plan and prioritize policies, projects and programs to implement over the next three to five years.

## Attracting the “Interested but Concerned” cyclist



“Interested but Concerned” cyclists are residents that like riding a bike, but are afraid to ride on the roadway with automobile traffic.

If we want to get to more than 15% bike mode share we need to get the “Interested but Concerned” cyclist out there riding for utilitarian purposes, like going to the grocery store, work, school, and daily errands.



# Complete Streets Demonstration Bike Innovations

## Living Laboratory

As part of the TMP Update, we want to test new bike facilities and see if they are right for Boulder. Treatments will be installed this summer/fall to offer a real world 'living laboratory' for cyclists to test and report results to the city. Proposed demonstration projects include:

## Buffered Bike Lanes + Protected Cycle Track

### University Avenue (Broadway to 9th Street)



#### Phase I: Buffered Bike Lanes Installation scheduled for August 2013

Buffered bike lanes provide a designated 'buffer' separating the bike lane from the adjacent auto travel lane and/or parking lane. We are maintaining the existing on-street bike lanes from 9th to 7th streets to compare the effectiveness of each on-street bike lane treatment.

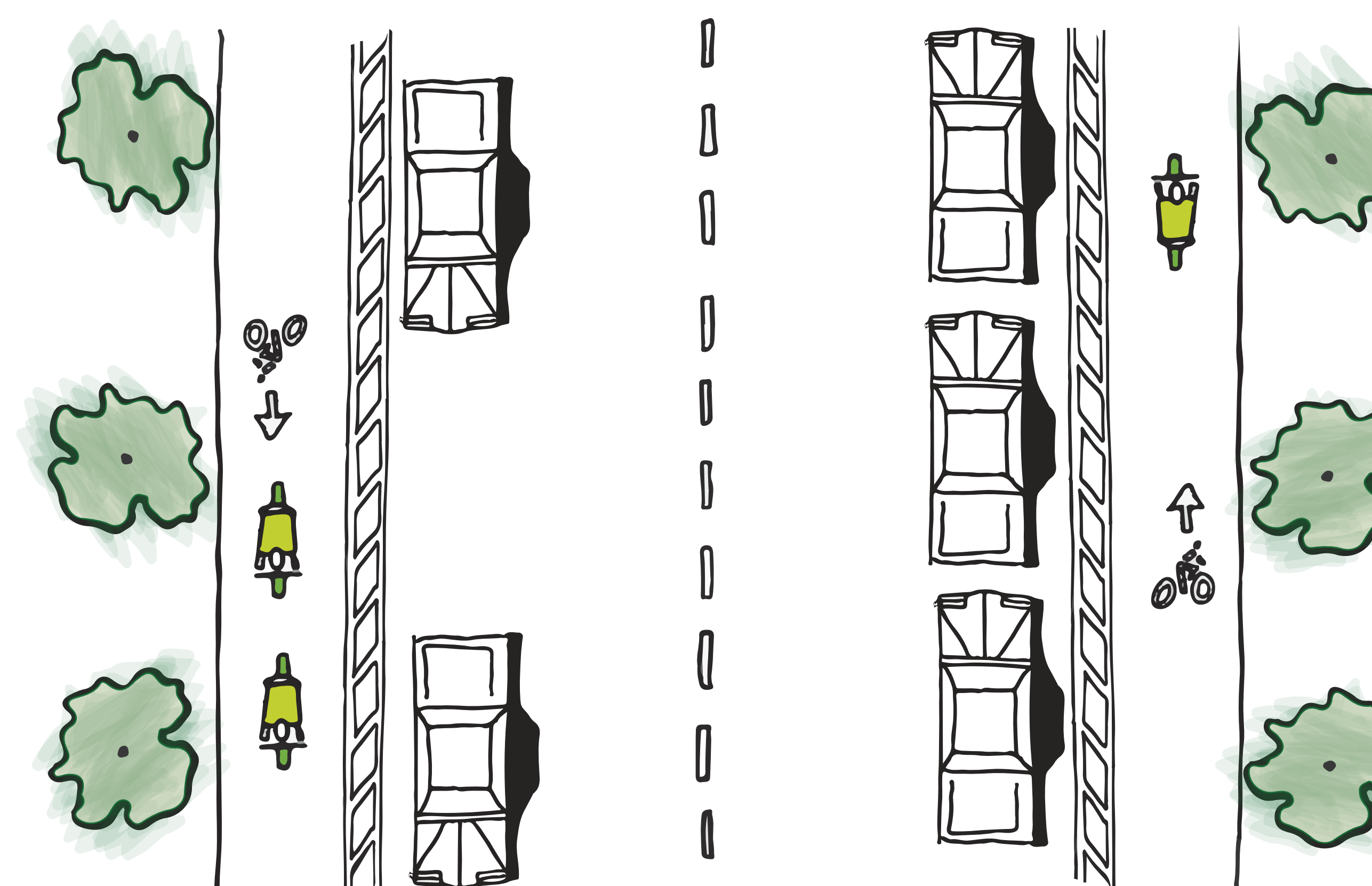
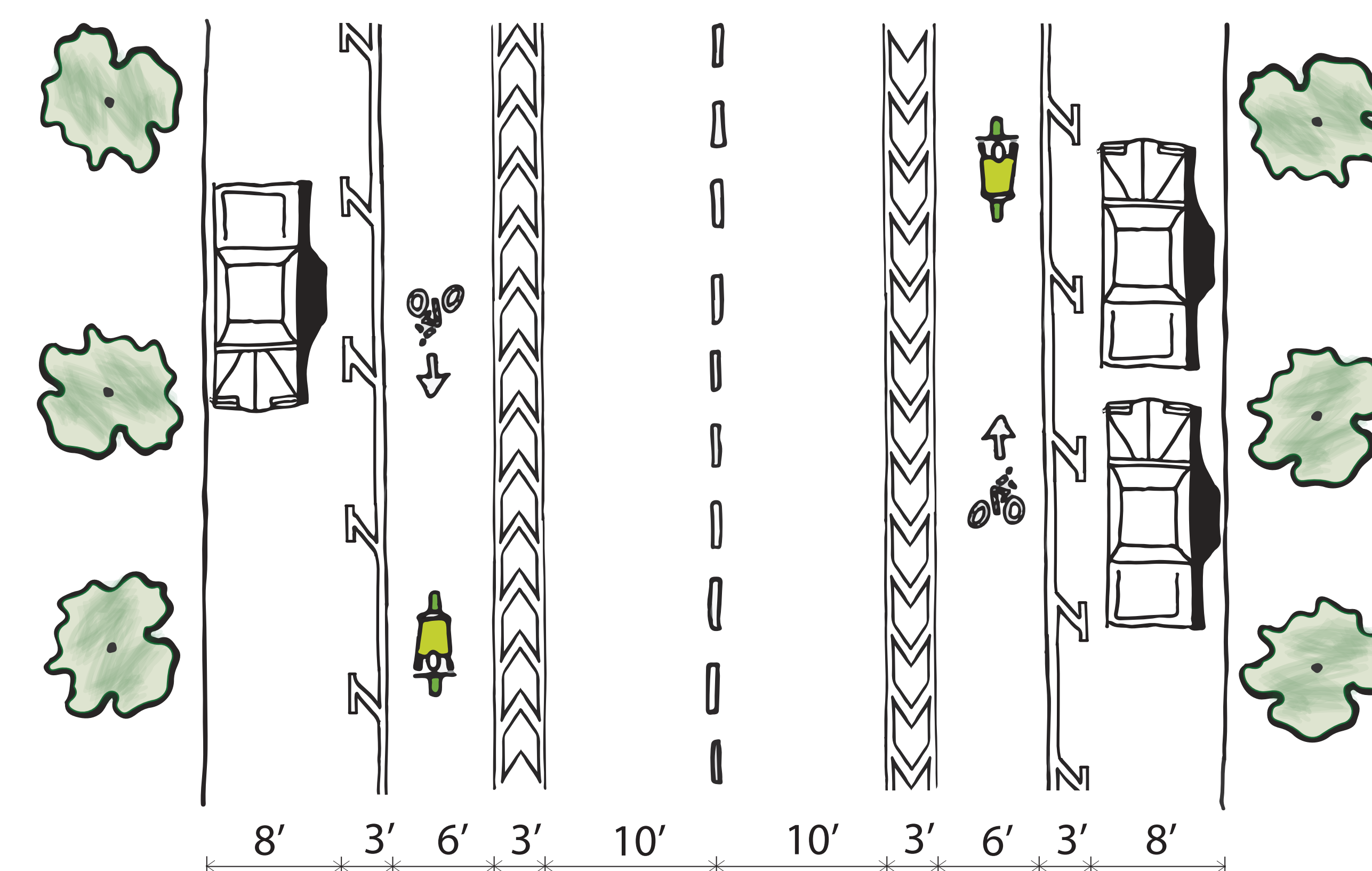


#### Phase II: Protected Cycle Track Installation proposed for spring/summer 2014

A cycle track is an on-street bicycle lane that is physically separated (often by a parking lane) from pedestrian and vehicle traffic. These lanes allow for a more comfortable and protected ride adjacent to traffic.



The proposed demonstration project will result in the loss of one to two on-street parking spaces at intersections and driveways to provide sight distance between drivers on the road and cyclists in the bike lane. Part of this experiment will be testing whether drivers can successfully and efficiently park in a marked area away from the curb.





# Complete Streets Demonstration Bike Innovations

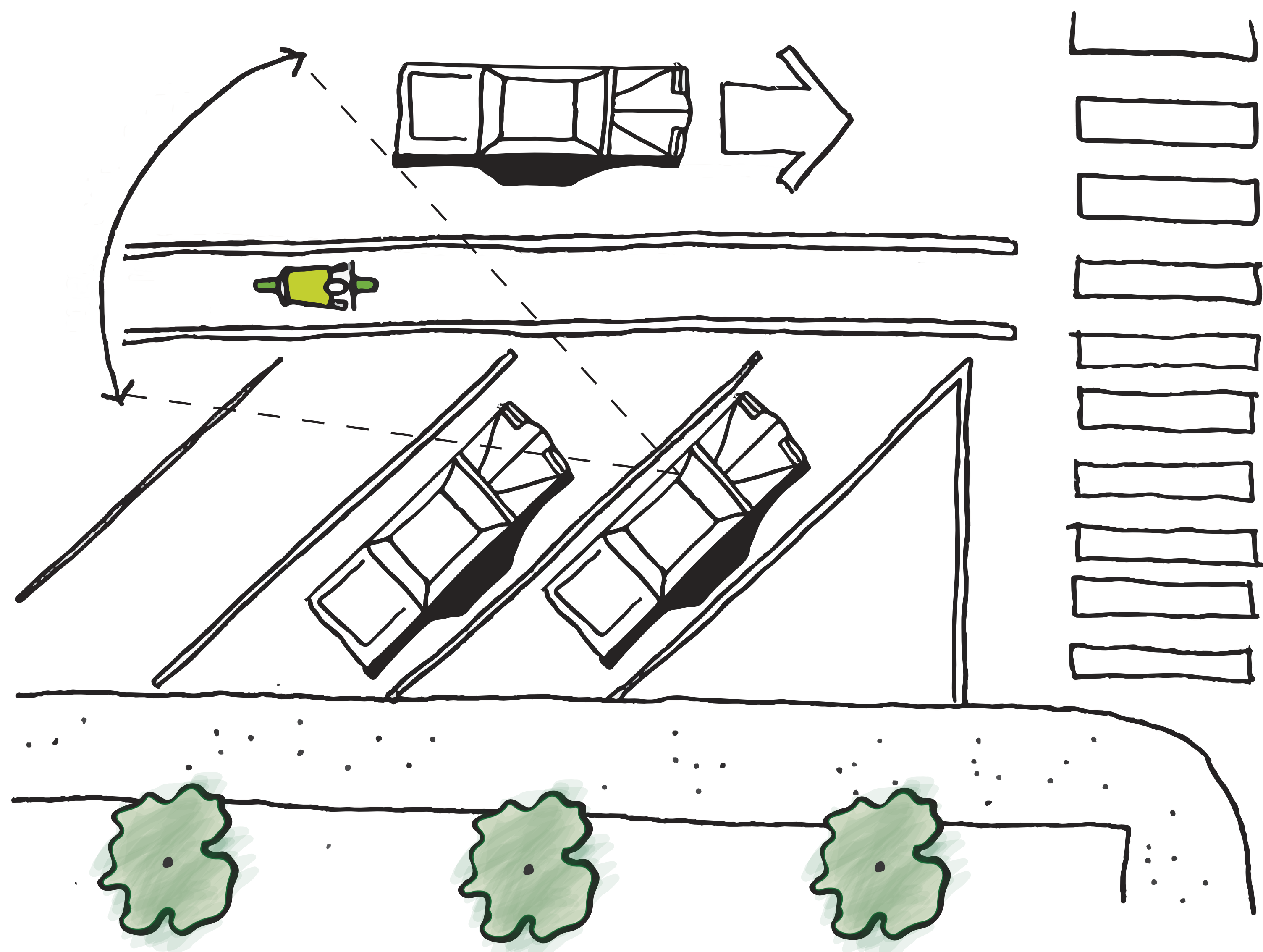
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## Back-in-Angle Parking

**University Avenue (Broadway to 17th Street)**  
Installation scheduled for August 2013

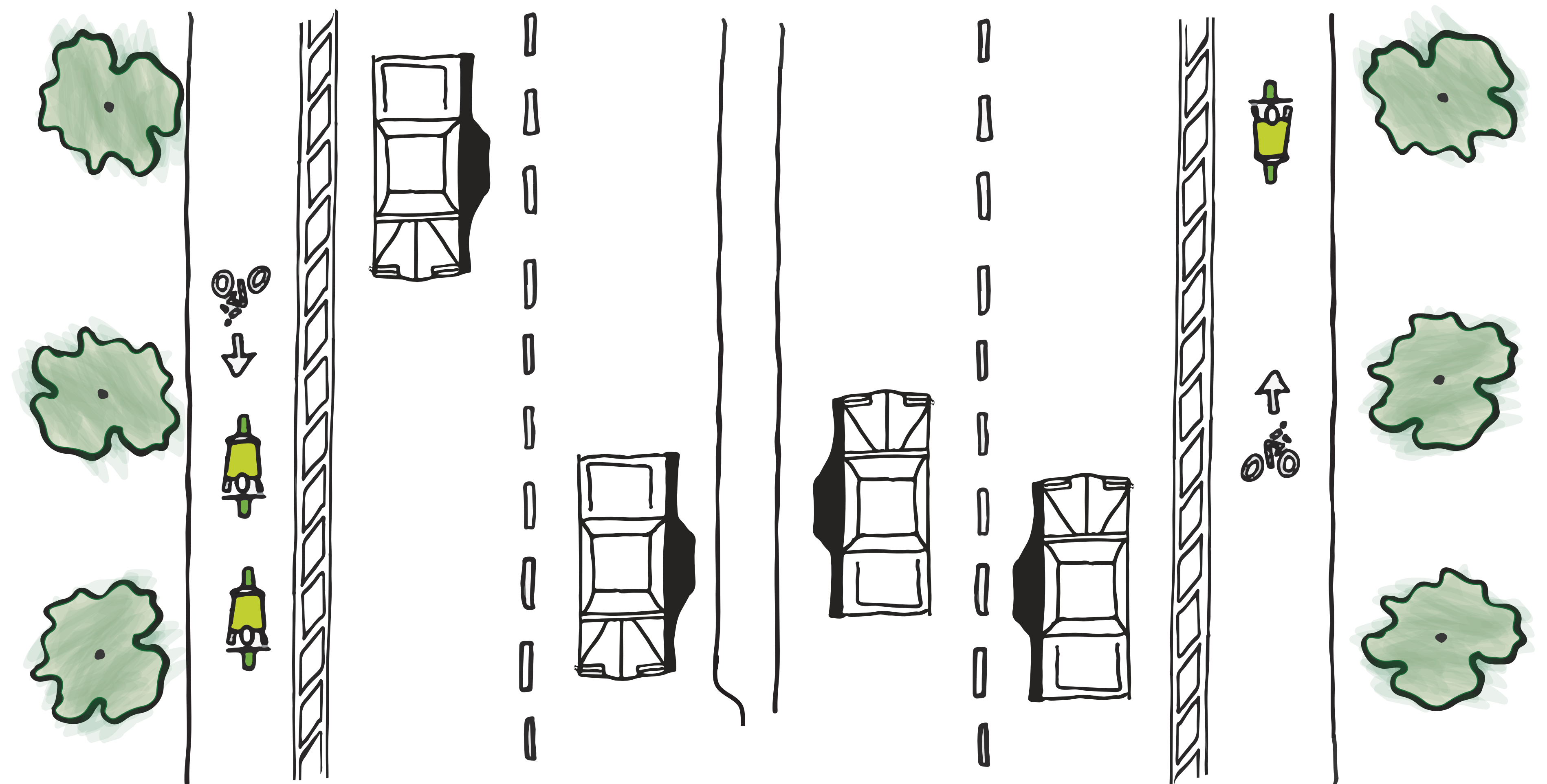
The Living Laboratory proposes to change angled parking to Back-in angled parking, in an effort to reduce the potential for conflict and documented collisions between cyclists and vehicles backing out blindly into the bike lane.



## Protected Cycle Track

**Baseline Rd. (30th -35th street)**  
Installation scheduled for August 2013

A cycle track is an on-street bicycle lane that is physically separated from pedestrian and vehicle traffic. These lanes allow for a more comfortable and protected ride adjacent to traffic.



Example of a physical buffer that can be used in addition to striping.



# Complete Streets Demonstration Bike Innovation

## Living Laboratory

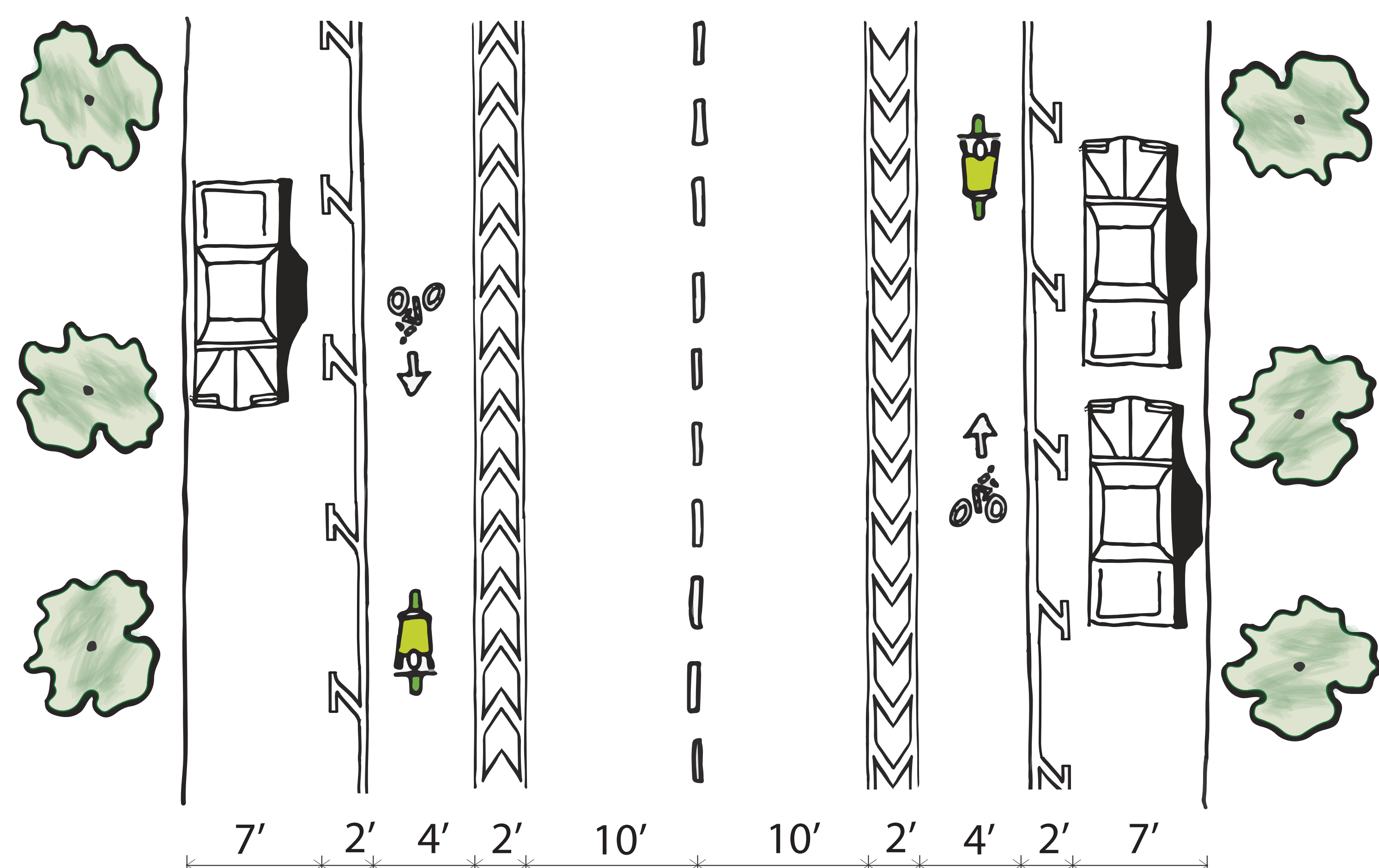
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## Testing Two Types of Buffered Bike Lanes

### Spruce Street Corridor

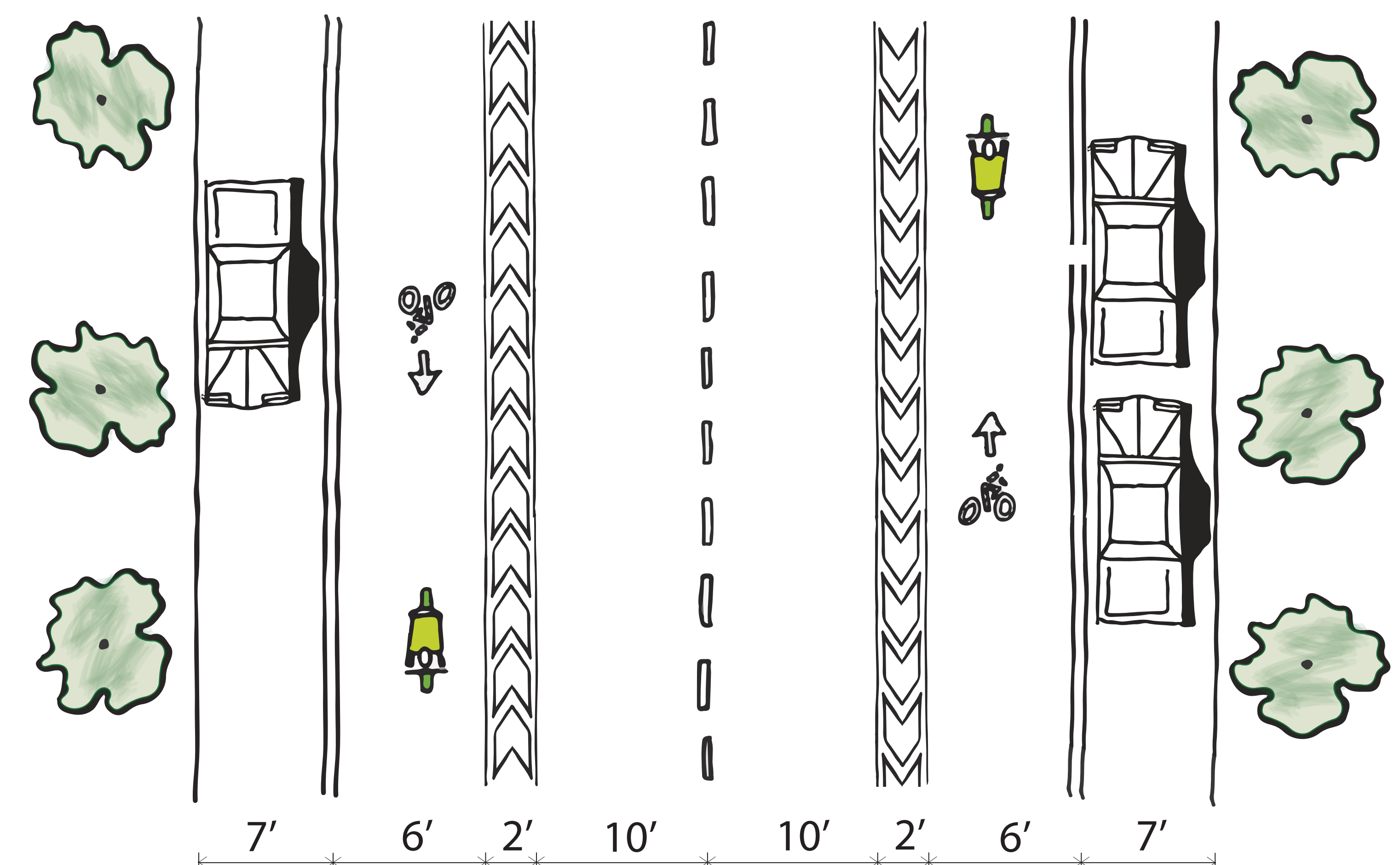
This residential street between 15th Street and Folsom offers a good east/west connection that is often used by cyclists but currently lacks dedicated bicycle infrastructure. The City is considering ways to improve this corridor for cyclists. There is room within the roadway to install buffered on-street bike lanes. Buffered bike lanes provide a designated 'buffer' separating the bike lane from the adjacent auto travel lane and/or parking lane. Two different buffered bike lane treatments will be tested, as detailed below:

#### Spruce Street (15th Street to 21st Street) Installation scheduled for September 2013



We want to know how effective each buffered bike Lane is in raising awareness and improving safety between cyclist and drivers in travel lanes or existing parked cars.

#### Spruce Street (21st Street to Folsom) Installation scheduled for September 2013





# Complete Streets Demonstration Bike Innovations

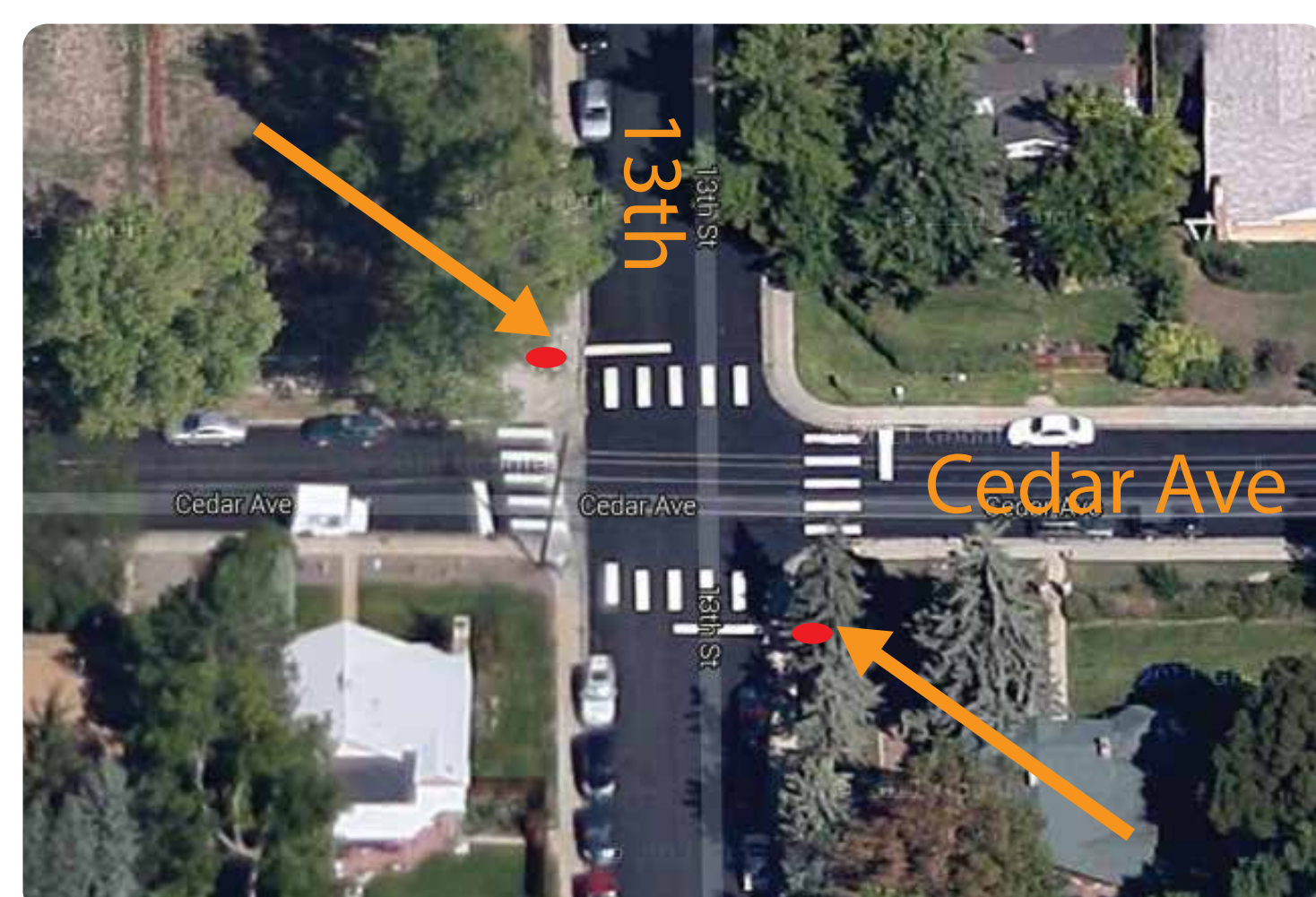
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## Bike Boulevard

**13th Street (Balsam to north of Cedar Avenue)**  
**Installation scheduled for Fall 2013**

Bike Boulevards are generally designated along residential streets with low volumes of auto traffic and low speeds where bicyclists are given priority. By branding these streets as the best and lowest stress routes we can provide a safer and more relaxing place to ride while encouraging mode share. We will be testing the effectiveness of establishing and promoting a bike boulevard along with traffic control changes to better accommodate bicyclists, while not increasing vehicle traffic in the area.



Stop signs on 13th Street at the intersection of Cedar Avenue (-) will be removed to better accommodate bicycle travel along 13th Street. The stops signs on Cedar Avenue at 13th Street will remain.

## Bike Box

**Folsom at Canyon (south bound)**  
**Installation scheduled for September 2013**

A Bike Box is a designated, marked area at a signalized intersection that places bicycles at the front of the queue. Bike boxes increase the visibility of bicyclists and allow them to enter/clear the intersection before motor vehicles.



## Bike Parking Regulations

A three part strategy to improve bike parking is in the works: Bike Corral Expansion, Bike Parking Subsidy for existing development, and Bike Parking Regulations Update for new development. The objective is to better accommodate future bike parking demand by introducing a more diverse set of tools to provide bike parking.





# Complete Streets Demonstration Bike Innovation

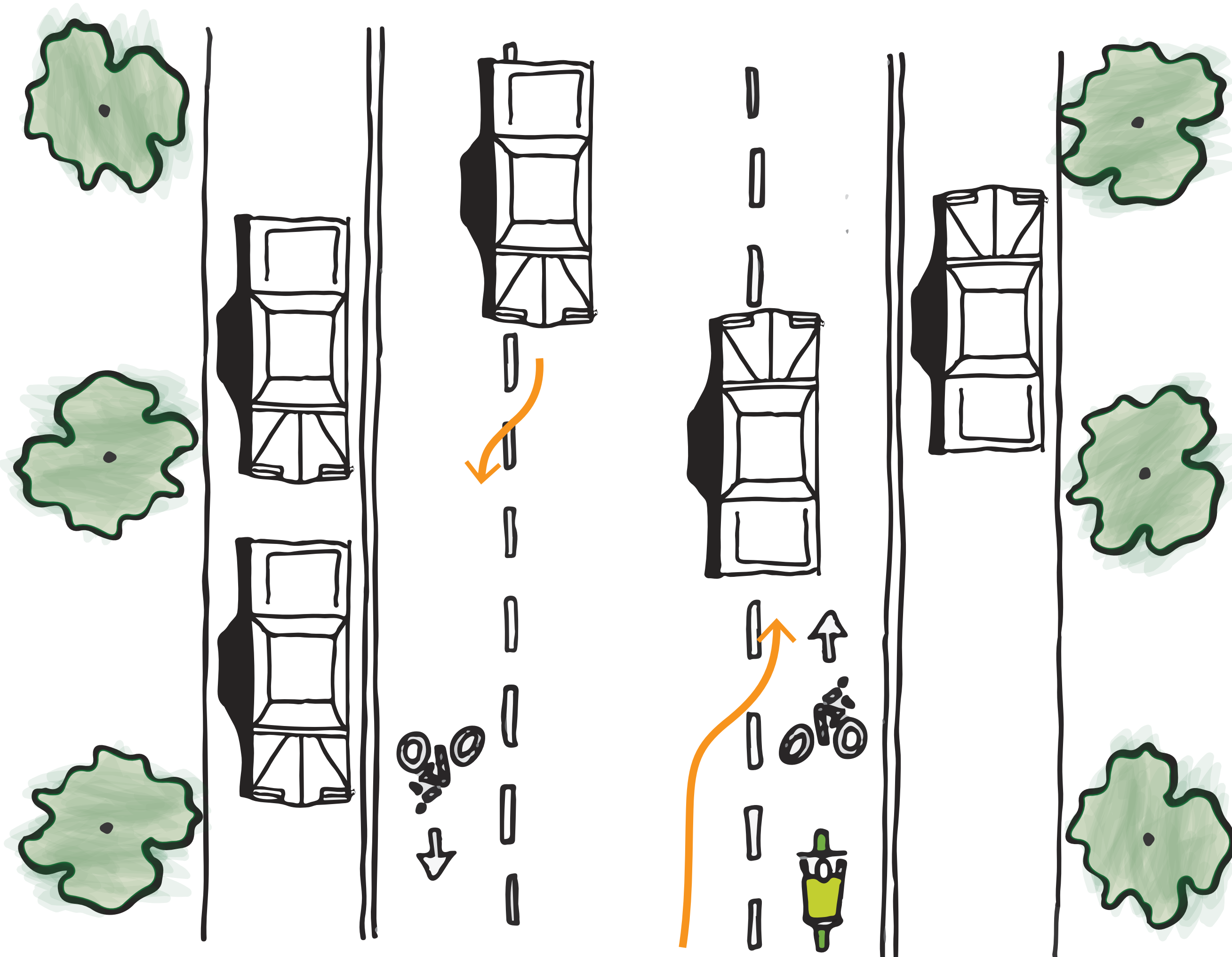
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## Advisory Bike Lane

**Harvard Lane (south of Bates Street)**  
**Installation scheduled for Fall 2013**

Used on low volume streets that are too narrow for traditional bike lanes, this variation of an on-street bike lane is marked with a solid white line on the right (next to the parked cars) and a dotted line on the left. This treatment prioritizes space for cyclists while still allowing drivers to encroach into the bike lane if needed to pass an oncoming vehicle.



Center vehicle lane  
space would be  
reduce to anywhere  
between 14'-18'  
wide.

## Electric-assist Bike Policy

The Boulder Revised Code (BRC) regulates the operation of electric-assisted bicycles in Boulder. Electric-assisted bicycles are currently permitted to operate on streets and in designated bicycle lanes, but are prohibited from operating on paths and sidewalks. City staff is developing a proposal for City Council consideration of a one-year pilot project to test the use of electric bicycles on off-street multi-use paths (this pilot will not include open space trails).

Changing an ordinance, even for a pilot program, requires council action. The Transportation Advisory Board will hold a public hearing on Sept. 9 and make a formal recommendation to City Council. Council will consider the pilot ordinance change at its on meeting on Oct. 1, 2013.





# Complete Streets Innovations For Future Consideration

The initiatives below require additional study or a public process to explore community and Board interest. Each are still under consideration and may be advanced as part of the living laboratory concept.

## Glow Paint for Multi-use Paths

Use photoluminescence paint that charges during the day and glows for up to 10 hours at night on multi-use paths to denote lanes and traffic markers at locations with limited site distance or other engineering constraints.

### Suggested Location:

Boulder Creek Path at 29th Street entrance to Scott Carpenter Park; Bear Creek Path at Martin Drive underpass west approach.

Slip resistance of products must be confirmed before demo installation.

## Revisioning 30th Street Corridor

A comprehensive study is required and a proposed priority of the CU East Campus Connection project (see Integration with TMP Focus Areas). Reconfiguring the roadway segment from Baseline to Arapahoe roads by converting the four-lane roadway into a three-lane roadway. This treatment would allow new space to be dedicated to bike, pedestrian and transit improvements as well as context sensitive and urban design enhancements.

## Slow Zones

Established in small, self-contained areas that consist primarily of local residential streets, Neighborhood Slow Zones reduce the speed limit to 20 mph and add mitigation measures to change driver behavior. Additional public process is necessary to revisit the City's traffic mitigation program policies and procedures. This could be prioritized in 2014 or beyond.



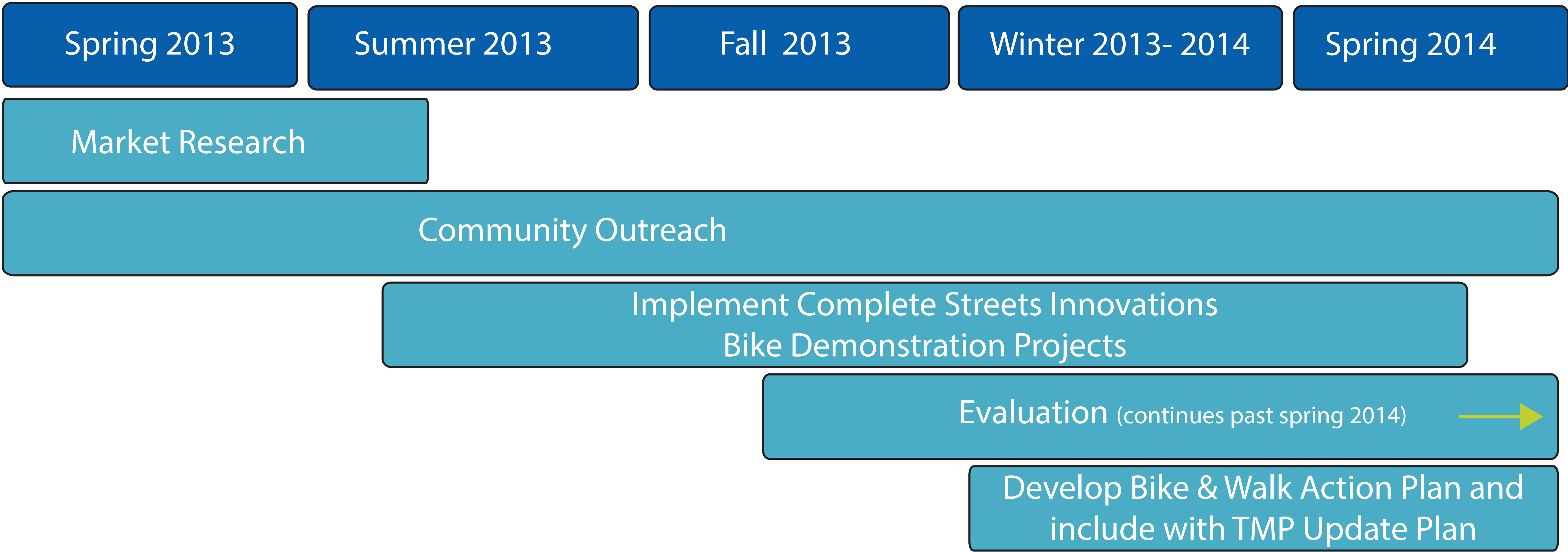
# Complete Streets Evaluation & Project Schedule

## Evaluation

Performance monitoring of the living laboratory bike innovation demonstration projects will include several qualitative and quantitative measurements:

- Bike and Walk Audits, Focus Groups and a Feedback Panel are forums that have been established to offer community interaction and public input before, during and after treatments are installed.
  - Transportation data will be collected and analyzed to provide a before/after comparison of modal traffic volume, vehicle speeds, and collision experience.
  - Field observations to track driver and bicyclist behavior also will be conducted.
  - Federal Highway Administration FHWA authorization is required to experiment with advisory Bike Lane innovation(s). Note: Evaluation criteria and Installation of this treatment depends on FHWA review and approval.
- A Low-stress bicycle network analysis will be conducted to evaluate before/after level of "traffic stress" and define whether treatments reduce stress level for bicyclists. High-stress streets are measured as those with high speed limits, limited or non-existent bike lanes and signage, and large distances to cross at intersections.

## Complete Streets Bike Innovations Project Schedule



### TMP Update Schedule

The schedule for the TMP Update is being adjusted to reflect the city process and work load associated with a potential ballot initiative for transportation funding in November 2013. Staff will continue to move forward with TMP Update process accordance with City Council and Transportation Advisory Board guidance, incorporating TAB comments and community input, throughout 2013 and into 2014.